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Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 1 of 5

Complete if Known

Application Number 09/393,998
 Filing Date September 8, 1999
 First Named Inventor Craig Culver
 Art Unit 2629
 Examiner Name Boddie, William
 Attorney Docket Number IMM060.RE

U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code ² (if known)			
	1.	US- 4,712,101	12/8/1987	Culver	
	2.	US- 4,868,549	9-19-1989	Affinto et al.	
	3.	US- 5,004,391	4-2-1991	Burdea	
	4.	US- 5,450,079	9-12-1995	Dunaway	
	5.	US- 5,506,605	4-9-1996	Paley	
	6.	US- 5,631,669	5-20-1997	Stobbs et al.	
	7.	US- 5,691,898	11-25-1997	Rosenberg et al.	
	8.	US- 5,825,308	10-20-1998	Rosenberg	
	9.	US- 5,914,705	6-22-1999	Johnson et al.	
	10.	US- 5,956,016	9-21-1999	Kuenzner et al.	
	11.	US- 6,069,614	5-30-2000	Singhal	
	12.	US- 6,107,992	8-22-2000	Ishigaki	
	13.	US- 6,184,862	2-6-2001	Leiper	
	14.	US- 6,256,011	7-3-2001	Culver	
	15.	US- 6,300,936	10-9-2001	Braun et al.	
		US-			
		US-			
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials *	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ³
		Country Code ⁴ - Number ⁵ - Kind Code ⁶ (if known)				
	16.	EP 0349086	1-3-1990	Stork Kwant B.V.		
	17.	JP 01-003664	7-19-1990	Taito Corp.		
	18.	JP 02-109714	1-13-1992	Epoch Co. and Key-Planning Co.		
	19.	JP 04-007371	8-3-1993	Taito Corp.		
	20.	JP 05-193862	1-27-1995	Sega Corp.		

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**INFORMATION DISCLOSURE
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Sheet 2 of 5

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Filing Date	September 8, 1999
First Named Inventor	Craig Culver
Art Unit	2629
Examiner Name	Boddie, William
Attorney Docket Number	IMM060RE

NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	21.	BAIGRIE, "Electric Control Loading - A Low Cost, High Performance Alternative," Proceedings, pp. 247-254, November 6-8, 1990.	
	22.	BROOKS et al., "Hand Controllers for Teleoperation - A State-of-the-Art Technology Survey and Evaluation," JPL Publication 85-11; NASA-CR-175890; N85-28559, pp. 1-84, 03/1/1985.	
	23.	BURDEA et al., "Distributed Virtual Force Feedback, Lecture Notes for Workshop on Force Display in Virtual Environments and its Application to Robotic Teleoperation," 1993 IEEE International Conference on Robotics and Automation, pp. 25-44, 05/02/1993.	
	24.	CALDWELL et al., "Enhanced Tactile Feedback (Tele-Taction) Using a Multi-Functional Sensory System," 1050-4729/93, pp. 955-960, 1993.	
	25.	GOTOW et al., "Controlled Impedance Test Apparatus for Studying Human Interpretation of Kinesthetic Feedback," WA11-11.00, pp. 332-337, 1989.	
	26.	JONES et al., "A perceptual analysis of stiffness," ISSN 0014-4819 Springer International (Springer-Verlag); Experimental Brain Research, Vol. 79, No. 1, pp. 150-156, 1990.	
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	28.	RUSSO, "Controlling Dissipative Magnetic Particle Brakes in Force Reflective Devices," DSC-Vol. 42, Advances in Robotics, pp. 63-70, ASME 1992.	
	29.	SNOW et al., "Model-X Force-Reflecting-Hand-Controller," NT Control No. MPO-17851; JPL Case No. 5348, pp. 1-4, 06/15/1989.	
	30.	STANLEY et al., "Computer Simulation of Interacting Dynamic Mechanical Systems Using Distributed Memory Parallel Processors," DSC-Vol. 42, Advances in Robotics, pp. 55-61, ASME 1992.	
	31.	TADROS, "Control System Design for a Three Degree of Freedom Virtual Environment Simulator Using Motor/Brake Pair Actuators", MIT Archive © Massachusetts Institute of Technology, pp. 1-88, February 1990.	

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	32.	ADELSTEIN, "A Virtual Environment System For The Study of Human Arm Tremor," Ph.D. Dissertation, Dept. of Mechanical Engineering, MIT, June 1989.	
	33.	BEJCZY, "Generalization of Bilateral Force-Reflecting Control of Manipulators," Proceedings Of Fourth CISM-IFTOMM, Sep. 8-12, 1981.	
	34.	BEJCZY, "Sensors, Controls, and Man-Machine Interface for Advanced Teleoperation," Science, Vol. 208, No. 4450, pp. 1327-1335, 1980.	
	35.	EBERHARDT et al., "OMAR - A Haptic display for speech perception by deaf and deaf-blind individuals," IEEE Virtual Reality Annual International Symposium, Seattle, WA, Sep. 18-22, 1993.	
	36.	HOWE, "A Force-Reflecting Teleoperated Hand System for the Study of Tactile Sensing in Precision Manipulation," Proceedings of the 1992 IEEE International Conference on Robotics and Automation, Nice, France, May 1992.	
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	39.	KONTARINIS et al., "Display of High-Frequency Tactile Information to Teleoperators," Telemanipulator Technology and Space Telerobotics, Won S. Kim, Editor, Proc. SPIE Vol. 2057, pp. 40-50, Sep. 7-9, 1993.	
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	42.	PATRICK et al., "Design and Testing of A Non-reactive, Fingertip, Tactile Display for Interaction with Remote Environments," Cooperative Intelligent Robotics in Space, Rui J. deFigueiredo et al., Editor, Proc. SPIE Vol. 1387, pp. 215-222, 1990.	
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Sheet 4 of 5

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First Named Inventor	Craig Culver
Art Unit	2629
Examiner Name	Boddie, William
Attorney Docket Number	IMM060RE

NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	46.	"Cyberman Technical Specification," Logitech Cyberman SWIFT Supplement, 4/5/1994.	
	47.	AUKSTAKALNIS et al., "Silicon Mirage: The Art and Science of Virtual Reality," ISBN 0-938151-82-7, pp. 129-180, 1992.	
	48.	BEJCZY et al., "A Laboratory Breadboard System For Dual-Arm Teleoperation," SOAR '89 Workshop, JSC, Houston, TX, July 25-27, 1989.	
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	53.	KACZMAREK et al., "Tactile Displays," Virtual Environment Technologies, 1995.	
	54.	MARCUS, "Touch Feedback in Surgery," Proceedings of Virtual Reality and Medicine The Cutting Edge, Sep. 8-11, 1994.	
	55.	OUHYOUNG et al., "The Development of a Low-Cost Force Feedback Joystick and Its Use in the Virtual Reality Environment," Proceedings of the Third Pacific Conference on Computer Graphics and Applications, Pacific Graphics '95, Seoul, Korea, 21-24 August 1995.	
	56.	OUH-YOUNG, "A Low-Cost Force Feedback Joystick and Its Use in PC Video Games," IEEE Transactions on Consumer Electronics, Vol. 41, No. 3, August 1995.	
	57.	PIMENTEL et al., "Virtual Reality: through the new looking glass," 2 nd Edition; McGraw-Hill, ISBN 0-07-050167-X, pp. 41-202, 1994.	
	58.	SCANNELL, "Taking a Joystick Ride," Computer Currents, Boston Edition, Vol. 9, No. 11, November 1994	
	59.	United States Patent and Trademark Office, Office Action, Application No. 09/875,458, mailed June 28, 2006.	

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Sheet 5 of 5

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	60.	United States Patent and Trademark Office, Office Action, Application No. 09/875,458, mailed January 1, 2006.	
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	65.	United States Patent and Trademark Office, Office Action, Application No. 09/875,458, mailed January 13, 2003.	
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Examiner Signature	/William Boddie/	Date Considered	07/13/2010
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